

**Work Order ID 59781**

Friday, June 11, 2010 11:42:58 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 6/10/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 10-06-11

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3274	D
IIN-D206-642	Rev M

100

0.00



DOCUMENT CONTROL

DC

Document Control

Memo

0.00

Photocopy bluefile &amp; type labels per PPP D206-642-541

CHG003

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Customer:

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Approvals: Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop


**Sequence ID/  
Work Center ID**

110


**Operation  
Description**

Skidtubes

**Set Up/  
Run Hours**

0.00

Tool ID

Tool #

**Plan  
Code**
**Accept  
Qty**
**Reject  
Qty**
**Reject  
Number**
**Insp.  
Stamp**

Skidtubes

Skidtubes

**Memo**

0.00

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and QSI004

AR Aluminum Rod Batch: M14062/M112507

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

DD 10-6-15

BB 10/06/15 10/06/15

PTO

M 016/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No DQA: J Date: 10/07/08  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10.06.28	110	Aft bend is 3.185" high. → 0.085" over → bend process	<i>GP</i> 10.06.28 per CJ1042	Acceptable Increases <del>drag</del> drag moment counts buoyancy moment	<i>DP</i> 10-6-08	<i>S</i> 10.06.29	<i>GP</i> 10.06.28 CJ1042	<i>S</i> 10.06.29

NOTE: Date & initial all entries

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Required Date: 6/25/2010 Req'd Qty: 1.00

Accept



Setup Start



Stop



Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center ID

120



HandFinish

Hand Finishing

Operation  
Description

Chemical Conversion Coat per QSI005 4.1

Set Up/  
Run Hours

0.00

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

1 6/6/16

130



QC

Quality Control

QC3- Inspect Part Finish

0.00

S 6/6/16

0.00

140



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

S 6/6/16

0.00

fxo

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	Barcode
	QC:	Date:	SPC (Y/N):	Date:		Stop	Barcode

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1-Open Ø0.313" and 0.375" crossbolt spacer holes using DT8743 as per Dwg D3274								
	2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube								
	3-Bond web in place as per Dwg D3274 & QSI 015.								
	A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> M115519 <input type="checkbox"/>								
	Sikaflex expire date: <input type="checkbox"/> 10/11/13 <input type="checkbox"/>								
	Start: <input type="checkbox"/> 07/06/16 Time: <input type="checkbox"/> 2:25 <input type="checkbox"/>								
	Finish: <input type="checkbox"/> 07/06/16 Time: <input type="checkbox"/> 9:45 AM <input type="checkbox"/>								
	(Adhere for 12 hours)								

) n v/b/16

160



QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

0.00

Memo

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	Barcode
	QC:	Date:	SPC (Y/N):	Date:		Stop	Barcode

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170		0.00							
	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.								
	2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2 OPEN HOLES TO .297". Deburr								
	3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD END OF TUBE DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES) REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES								
	4- Countersink crossbolt spacer holes as per Dwg D3274								
	5- prepare for welding								

180



QC5- Inspect part completeness to step on W/O

0.00

S. doebig

QC

Quality Control

Memo

0.00

(4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No DQA: \_\_\_\_\_ Date: 04/08/08  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/08/08 170		height was bent by .005" Should be 3.100" measured 3.05" Angle is 4.7°		See #10 ncr on back of page #2.				
		On Process					10/08/08 N/A	

NOTE: Date & initial all entries

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Cust Item ID:

Required Date: 6/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run

Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center ID

190

Operation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Skidtubes

0.00

Skidtubes

Memo

0.00

1-Insert D2649 &amp; D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod

A/R  Aluminum Rod  m112507

3-Grind cross bolt welds flush as per Dwg D3274.

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

8E 10/06/30

) 10/6/30

200



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

S wloc 130

0.00

Memo

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Cust Item ID:

Required Date: 6/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center ID

210



QC

Quality Control

Operation  
Description

QC10- Inspect visual per QSI004- ground welds

Set Up/  
Run Hours

0.00

S. oldo bao

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

220



HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

0.00

Memo

0.00

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

230



Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

M1K841

Memo

0.00

START TIME: 10.00  
OVEN TEMPERATURE: 320°  
FINISH TIME: 10.30.

① BR 10-7-1

1 Bl 10-7-1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 6/10/2010 Start Qty: 1.00

Required Date: 6/25/2010 Req'd Qty: 1.00

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:	Stop		

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 	HAND FINISHING RESOURCE #1	0.00							
HandFinish	Memo	0.00							
Hand Finishing	✓ 1-Install wearpads & gaskets as per Dwg D3274.								
	✓ 2-Install ring as per Dwg D3274 A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> M113.519 <input type="checkbox"/> Sikaflex expire date: <input type="checkbox"/> 10/11		⇒ 10/07/06						
	✓ 3-Inspect for foreign objects as per QSI 024								
	✓ 4-Spray inside of tube on both sides of web with LPS-3 A/R LPS-3 Batch: <u>01A</u>								
	✓ 5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive. A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> M113.519 <input type="checkbox"/> Sikaflex expire date: <input type="checkbox"/> 10/11								

280



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

6/07/06  
H

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**Work Order ID 59781**

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Item ID: D206-642-541

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Setup Start



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Start Date: 6/10/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

290



Packaging

Packaging

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

PPP  
59781

300



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

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**Work Order ID:** 59781



**Parent Item:** D206-642-541



**Parent Item Name:** Replacement Skidtube

**Comments:**

- IPP Rev:B 05.09.23 □ Revised per D206-642 Rev. J □ KJ/JLM
- IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM □
- IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD
- IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

**Start Date:** 6/10/2010

**Start Qty:** 1.00

**Required Date:** 6/25/2010

**Required Qty:** 1.00

D2600-1-190



Manufactured No

110

Each

36.0000

1 1



Extrusion Round 3" 206



D3285-1



Manufactured No

Location

LG

47575

Loc Qty

36

36

110

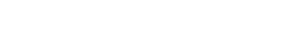
Each

153.0000

1 1



Cap



Location

LG

47635

Loc Qty

153

52511

4

52647

74

75

D3282-041



Float Web (206L/407)

Manufactured No

150

Each

6.0000

1 1



D2649



Cross Bolt Spacer

Manufactured No

Location

LG

57539

Loc Qty

6

6



190

Each

147.0000

1 1



Location

LG

55000

Loc Qty

147

58545

6

141

Loc Code

12



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 □ Revised per D206-642 Rev. J □ KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM □  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3275-1



Manufactured No

190 Each

71.0000

12

12



Crossbolt Spacer

Location	Loc Qty	Loc Code
LG	71	
53453	8	
57513	57	
58179	6	

BE 10/06/29

CR3212-4-03



Purchased No

250 Each

4,523.000

2



Cherry Rivet

Location	Loc Qty	Loc Code
ST311	4523	
111359	5	
112314	30	
114436	1476	
114450	1012	
114859	2000	

X2 W 10/07/06

D3415-041



Manufactured No

250 Each

67.0000

1



Nut Plate

Location	Loc Qty	Loc Code
ST056	67	
63842	67	

V1 W 10/07/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
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Start Date: 6/10/2010

Required Date: 6/25/2010

Start Qty: 1.00

Required Qty: 1.00

CCR264SS3-3



Purchased

No

250

Each

554.0000

2



Cherry Rivet

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST311	554	
112314	4	
113539	60	
113973	490	

V2 M1 v0107106

ALS4-1032-130



Purchased

No

250

Each

5,752.000

78



Insert

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

PKG11	5000	
114723	5000	
ST282	305	
110511	38	
114407	267	
ST381	447	
114654	447	

X78 M1 10107106

D3536-15



Manufactured

No

270

Each

19.0000

1



Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	7	
56055	7	
FP11	12	
59238	12	

V1 M1 10107106

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

Page 4

18

Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 □ Revised per D206-642 Rev. J □ KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM □  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3536-23



Manufactured No

270 Each 12.0000

1



Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP011	12	
-------	----	--

58819

	12	
--	----	--

	19	
--	----	--

D3536-35



Manufactured No

270 Each 19.0000

1



Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP012	19	
-------	----	--

58637

	7	
--	---	--

	12	
--	----	--

D3536-39



Manufactured No

270 Each 27.0000

1



Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	1	
----	---	--

51637

	1	
--	---	--

FP12	26	
------	----	--

58215

	12	
--	----	--

	14	
--	----	--

X1 4f 10/07/08

X1 9f 10/07/08

V1 2f 10/07/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

Page 5 / 8

Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 □ Revised per D206-642 Rev. J □ KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM □  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 6/10/2010

Required Date: 6/25/2010

Start Qty: 1.00

Required Qty: 1.00

D3535-15



Manufactured No

270 Each 16.0000

1



Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	6	
56053	6	
FP18	10	
59236	10	

VL M 10|07|06

D3535-35



Manufactured No

270 Each 15.0000

1



Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP018	15	
57528	2	
59237	13	

VL M 10|07|06

D3535-39



Manufactured No

270 Each 13.0000

1



Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	1	
51619	1	
FP18	12	
58214	12	

VL M 10|07|06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

Page 6 /8

Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J□KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM□  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3535-23



Manufactured No

270 Each 11.0000

1 1



Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP21

11

(57730)

11

X1 M 10107106

D3537-3



Manufactured No

270 Each 10.0000

1 1



Wearpad

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP17

10

(57512)

10

X1 M 10107106

D3537-1



Manufactured No

270 Each 49.0000

9 9



Wearpad

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP

1

55465

1

FP17

12

57713

3

58178

9

FP18

36

(59710)

36

X1 M 10107106

AN960C10L

NAS1149C0332 R

Purchased No

270 Each 0.0000

80 80

washer

M115000



X80 M 10107106

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

Page 7 / 8

Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 6/10/2010

Required Date: 6/25/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C416	NAS1149C0463 R	Purchased	No	270	Each	118.0000	1	1
-----------	----------------	-----------	----	-----	------	----------	---	---



washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST346	118	
00993	118	

D3672-1	Manufactured	No	270	Each	1,315.000	2
---------	--------------	----	-----	------	-----------	---



Phenolic Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST077	1315	
51674	315	
52505	1000	

AN3C4A	Purchased	No	270	Each	1,525.000	80
--------	-----------	----	-----	------	-----------	----



BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST350	1525	
114103	501	
114108	14	
114416	12	
114523	2	
114859	996	

X1 W 10107106

XZ L 10107106

X80 W 10107106

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:43:04 AM

Page 8

Work Order ID: 59781



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J□KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM□  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

AN4C5A



Purchased

No

270

Each

519.0000

1

1



BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST346	519	
(10552)	19	
112243	500	

X1 MU 10107106

D2646



Manufactured

No

270

Each

109.0000

1



Aft Cap

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-4	99	
(57332)	99	
FP6	10	
52663	10	

X1 MU 10107106

D3413-1



Manufactured

No

270

Each

37.0000

1



Ring

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST473	37	
51586	1	
53446	23	
(58524)	13	

X1 MU 10107106

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Cty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>AS</i>	MFG. APPR. <i>AM</i>	APPROVED <i>MAP</i>	DE APPR. <i>HM</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23	DATE 09.06.23	

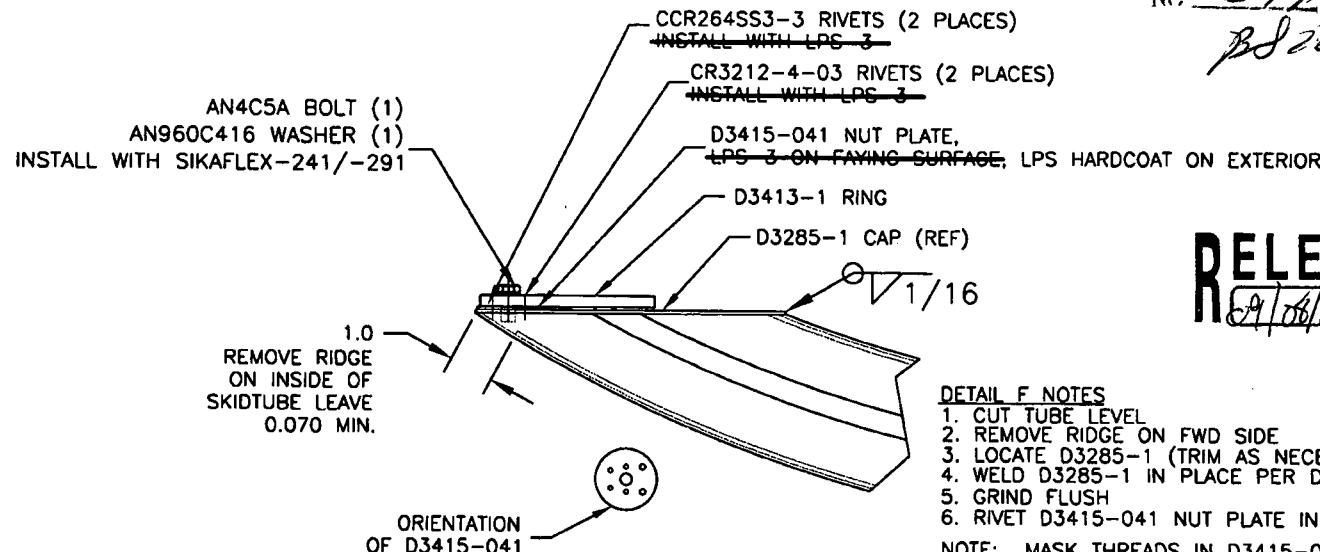
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
~~COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF~~  
~~POWDER COATING WITH MEK DEGREASER."~~

AMEND DETAIL F AS SHOWN:

SHO~~P~~PE~~Y~~  
 REV~~0~~1~~0~~  
 ENGI~~N~~EER~~Y~~  
**UNCONTRO~~LLED~~ DOCUMENT**  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK CRED~~I~~R  
 NO *(S928)*  
*BD 206-09*

### DETAIL F: END FINISHING DETAIL



**RELEASED**  
*09/06/23*

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
 PRIOR TO FINISH

**DART**

DESIGN CP	DRAWN BY <i>PH</i>	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

**RELEASED**  
07.02.12 *[Signature]*  
**DEO ATTACHED**

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

SHOP COPY

RETURN TO

ENCLOSURE

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

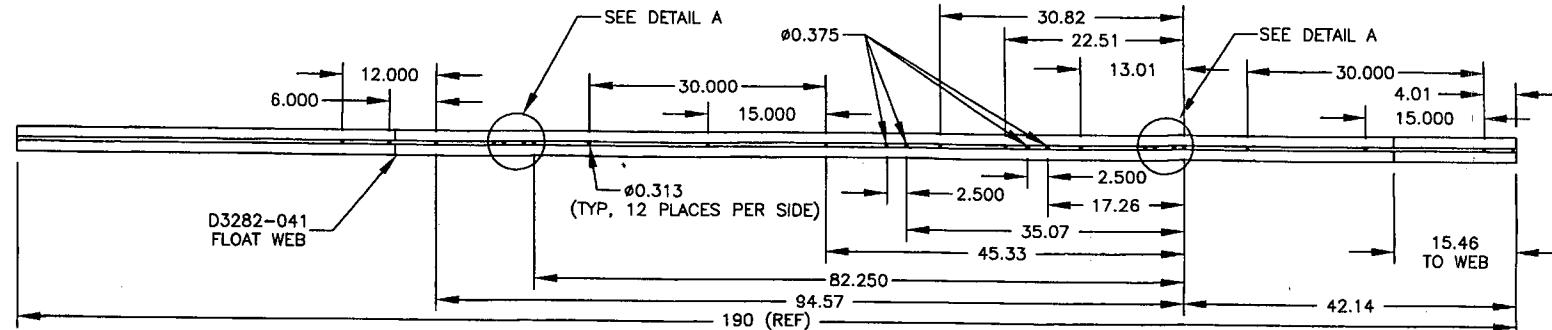
NO. *59781***GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX-241/291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

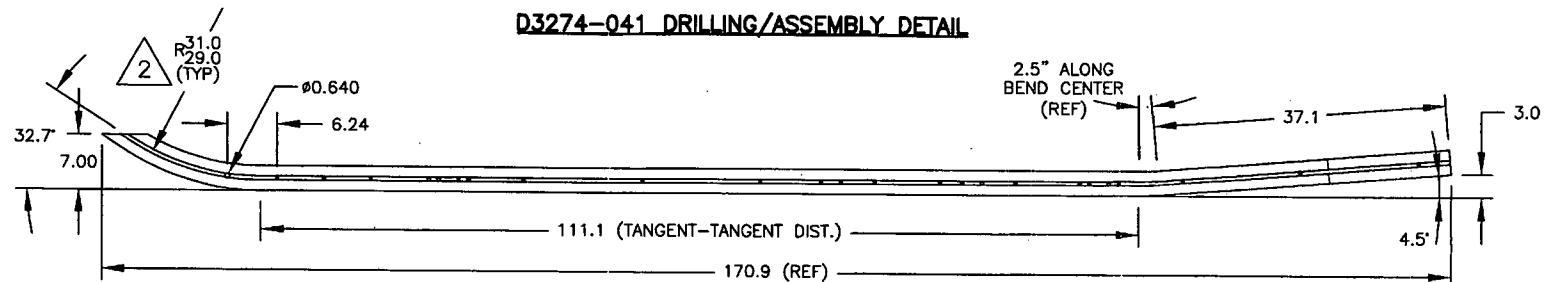
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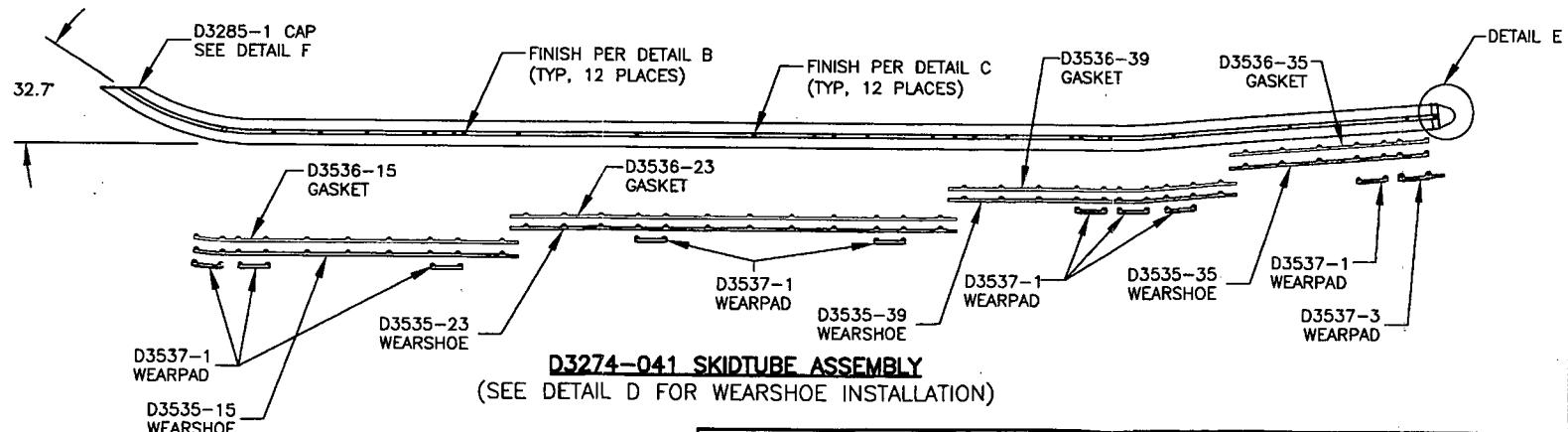
DET ATTACHED



D3274-041 DRILLING/ASSEMBLY DETAIL



D3274-041 BEND/DRILLING DETAIL



D3274-041 SKIDTUBE ASSEMBLY  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

W/ 59181

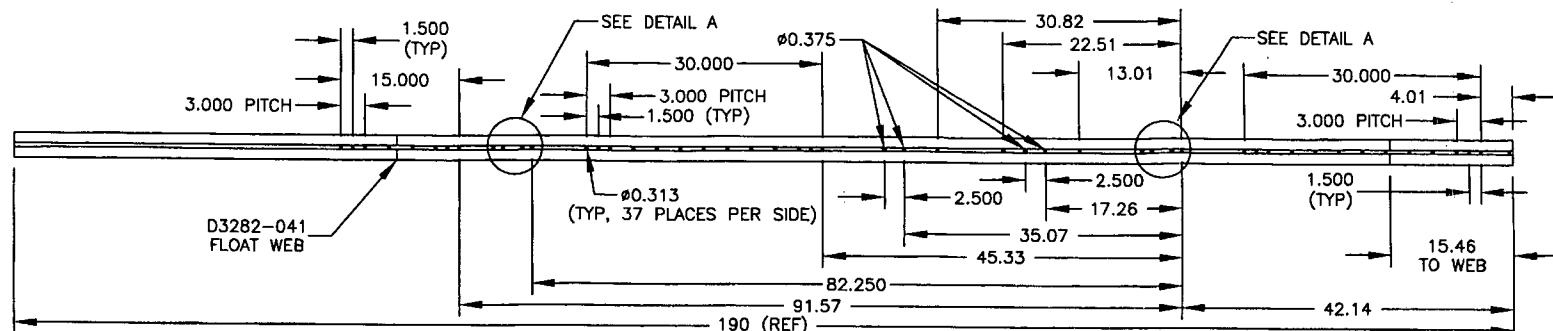
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PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE USA, INC.

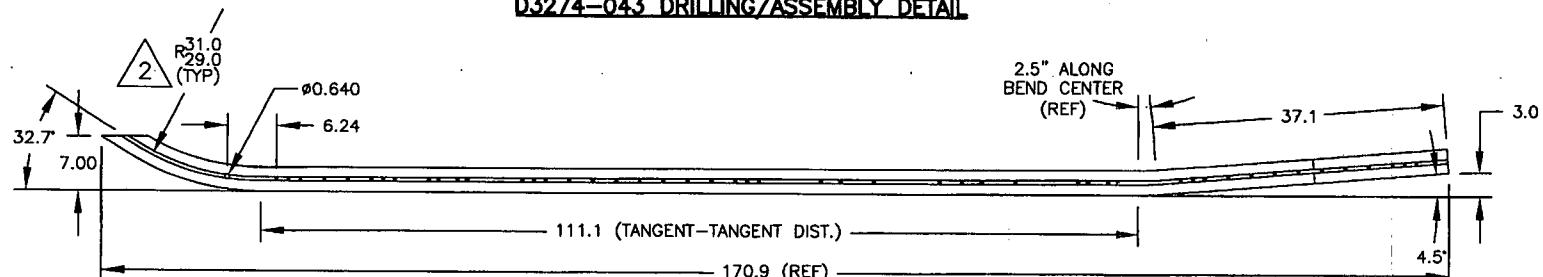
DESIGN	DRAWN BY	DART AEROSPACE USA, INC. PORT HADLOCK, WA
CP	PH	DRAWING NO. D3274
CHECKED	APPROVED	REV. D SHEET 2 OF 4

DATE 06.12.19 TITLE SKIDTUBE ASSEMBLY  
SCALE 1:15

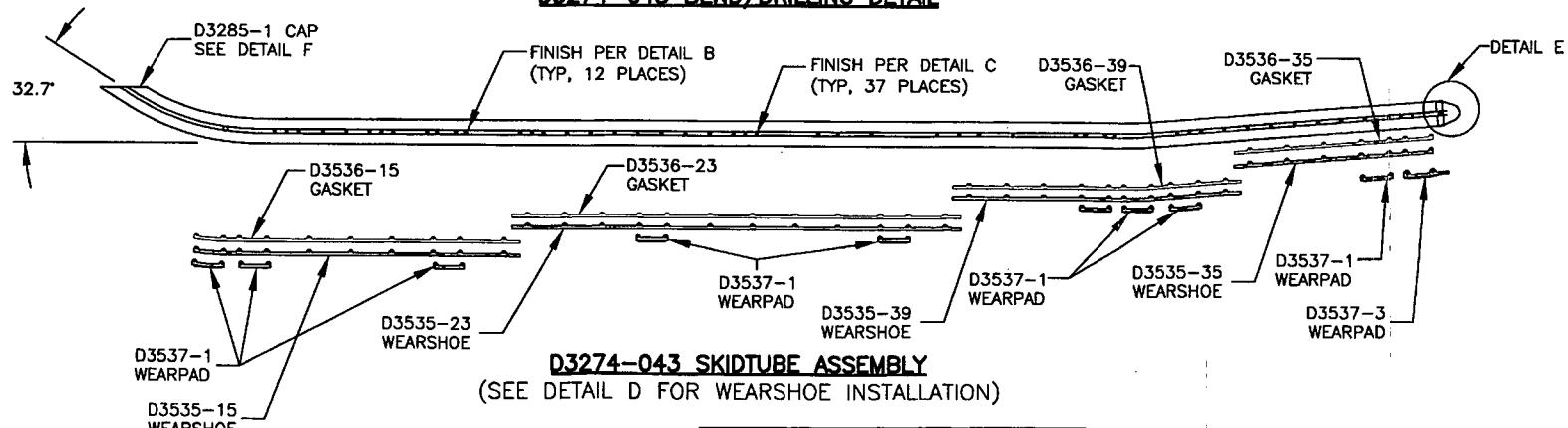
**DEO ATTACHED**



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



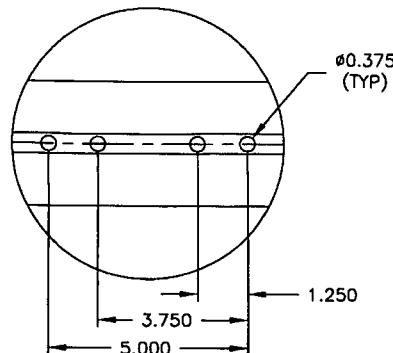
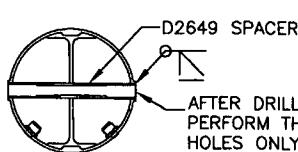
**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

**RELEASED**

67-0212-#

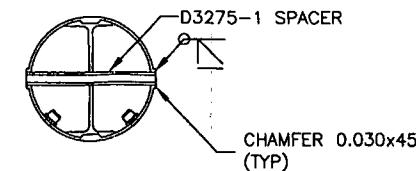
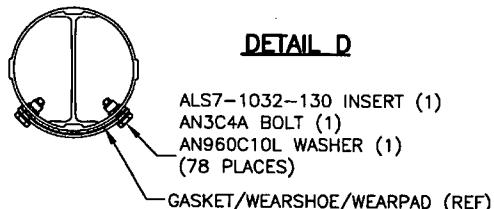
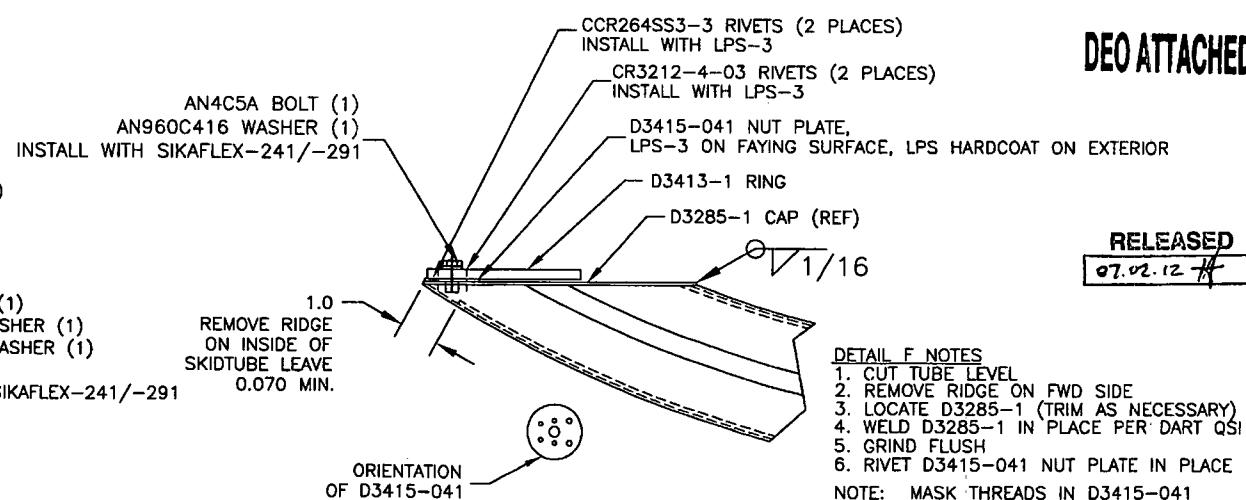
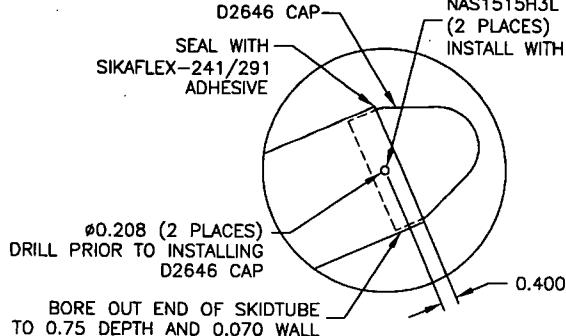
WLO 59781

DESIGN	DRAWN BY	DART	DART AEROSPACE USA, INC.
CP	PH		PORT HADLOCK, WA
CHECKED #	APPROVED #	DRAWING NO.	REV. D
		D3274	SHEET 3 OF 4
DATE	TITLE		SCALE
06.12.19	SKIDTUBE ASSEMBLY		1:15

**DETAIL A: DRILL DETAIL****DETAIL B**  
FOR Ø0.375 HOLES ONLY

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375  
HOLES ONLY:

1. CHAMFER HOLE 0.030x45°
2. INSERT D2649 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE TO Ø0.313x0.75 DEEP

**DETAIL C**  
FOR Ø0.313 HOLES ONLY**DETAIL D****DETAIL E**  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(2 PLACES)  
INSTALL WITH SIKAFLEX-241/-291**DET ATTACHED****RELEASED**

07.02.12

**DETAIL F NOTES**

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

W/10 59781

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CHECKED	APPROVED			DRAWING NO.	REV. D
				D3274	SHEET 4 OF 4
DATE	TITLE				SCALE
06.12.19	SKIDTUBE ASSEMBLY				1:3

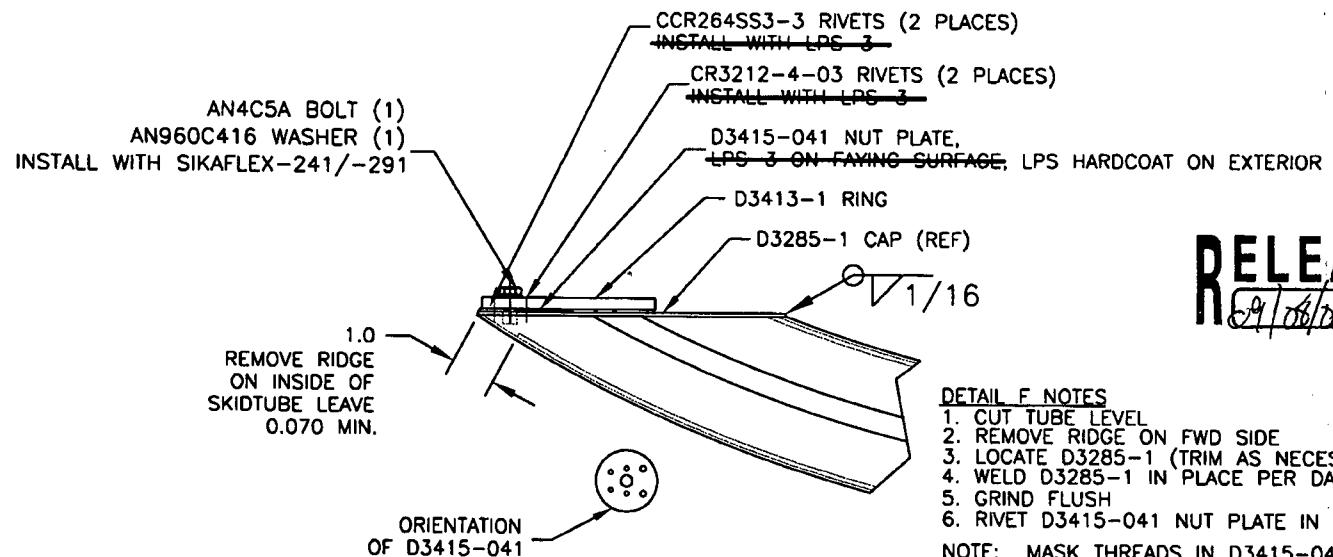
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED		MFG. APPR. <i>AM</i>	APPROVED <i>JAF</i>	DE APPR. <i>MM</i>	
DATE 09.06.17	DATE 09.06.23		DATE 09/06/23	DATE 09/06/23	DATE 09.06.23	

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS-3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
~~COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.~~"

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041 PRIOR TO FINISH

*w10 58282*

NO 230

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 57358  
Part number: DAC6-642-541  
Description: float tube  
Welding Process: Tig[] Mig[]  
Base material: Aluminium  
Current: AC[] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[] fail[]  
Penetration: pass[] fail[]

UNACCEPTABLE

Cracks: pass[] fail[]  
Undercut: pass[] fail[]  
Pin holes: pass[] fail[]  
Overlap (cold lap) pass[] fail[]  
Porosity (surface): pass[] fail[]  
Coloration: pass[] fail[]

Qualifier Barclay Elliott Date of Test Coupon 10-05-05

Welder Barclay Elliott Date of Test Coupon 10-05-05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld